

CLAIMS

Sub A1
1. A method of removing photoresist material from a semiconductor substrate, comprising:

5 C 1 providing a semiconductor substrate having a layer comprised of a low dielectric constant material disposed thereover and a layer comprised of photoresist material disposed over said layer comprised of said low dielectric constant material; and

removing said layer comprised of photoresist material with dimethyl sulfoxide.

10 2. The method of claim 1, wherein the low dielectric constant material has a dielectric constant of about 3.0 or less.

3. The method of claim 1, wherein the low dielectric constant material has a dielectric constant in the range from about 1.5 to about 3.0.

15 4. The method of claim 1, wherein the layer comprised of photoresist material is removed by subjecting the semiconductor substrate to dimethyl sulfoxide in liquid form.

20 5. The method of claim 4, wherein the semiconductor substrate is held in an ultrasonic bath.

6. The method of claim 5, wherein the ultrasonic bath is heated to at least about 50 °C.

25 7. The method of claim 6, wherein the semiconductor substrate is held in the ultrasonic bath for a period not longer than about 5 minutes.

Sub A8

8. A method of forming a semiconductor device, comprising:
providing a semiconductor substrate;
forming a layer comprised of a low dielectric constant material over said semiconductor substrate;
5 forming a layer comprised of photoresist material over said layer comprised of said low dielectric constant material;
patterning said layer comprised of photoresist material; and
removing said layer comprised of photoresist material with dimethyl sulfoxide.

10 9. The method of claim 8, wherein the low dielectric constant material has a dielectric constant of about 3.0 or less.

15 10. The method of claim 8, wherein the low dielectric constant material has a dielectric constant in the range from about 1.5 to about 3.0.

20 11. The method of claim 8, wherein the layer comprised of photoresist material is removed by subjecting the semiconductor substrate to dimethyl sulfoxide in liquid form.

25 12. The method of claim 11, wherein the semiconductor substrate is held in an ultrasonic bath.

13. The method of claim 12, wherein the ultrasonic bath is heated to at least about 50 °C.

14. The method of claim 13, wherein the semiconductor substrate is held in the ultrasonic bath for a period not longer than about 5 minutes.

5 15. A method of removing photoresist material from a semiconductor substrate, comprising:

providing a semiconductor substrate having a layer comprised of a low dielectric constant material disposed thereover and a layer comprised of photoresist material disposed over said layer comprised of said low dielectric constant material; and

placing said semiconductor substrate in an ultrasonic bath comprising dimethyl sulfoxide in liquid form, wherein said dimethyl sulfoxide removes said layer comprised of photoresist material.

10 16. The method of claim 15, wherein the low dielectric constant material has a dielectric constant of about 3.0 or less.

15 17. The method of claim 15, wherein the low dielectric constant material has a dielectric constant in the range from about 1.5 to about 3.0.

18. The method of claim 15, wherein the ultrasonic bath is heated to at least about 50 °C.

20 19. The method of claim 18, wherein the semiconductor substrate is held in the ultrasonic bath for a period not longer than about 5 minutes.